

(currently amended) through 9 (currently amended) and Claim 11 (new claim) are dependent claims.

**Response to the Office Action**

**A. Claim Rejections - 35 U.S.C. §112 First Paragraph**

The Examiner rejects original Claims 1-5 and 8-9 based on 35 U.S.C. §112, first paragraph, based on a perceived lack of support in the specification for the breadth of the genus claims. The applicant respectfully traverses the rejection.

The Specification supports broad genus claims because the science on which it is based is fundamental and leads to entirely predictable results. The Specification demonstrates that a direct cause of high altitude pulmonary edema ("HAPE") is a reduction in the osmotic pressure (a) inhibiting plasma from being extravasated into the lung alveoli and (b) pulling extravasated plasma back into the pulmonary capillaries. The Specification demonstrates that the direct cause of the reduction in osmotic pressure is a reduction in the difference in bicarbonate ion concentration from the arterial end to the venous end of the pulmonary capillaries of a person, for example a mountain climber, exposed to a hypoxic environment, such as at high altitude. A reduction in the bicarbonate ion concentration difference between the arterial and venous ends of the pulmonary capillaries means that there is less of a bicarbonate ion

concentration gradient and less diffusion of bicarbonate ions in the blood plasma moving from the arterial end toward the venous end of the capillary. Less diffusion means that there is less drag on the water in the arterial plasma by the diffusing bicarbonate ions and hence less osmotic pressure.

As demonstrated in the Specification, the reason for the reduction in bicarbonate concentration at high altitude is that insufficient oxygen is inspired by the mountain climber to sufficiently metabolize carbon in food to carbon dioxide and hence bicarbonate. As demonstrated by the Specification **ANYTHING** that acts to reduce the change in bicarbonate concentration in blood plasma from the arterial end to the venous end of a mountain climber's pulmonary capillaries will promote HAPE. As demonstrated in the Specification, **ANYTHING** that acts to increase the change in bicarbonate concentration from the arterial to the venous end of the mountain climber's pulmonary capillaries will inhibit HAPE.

As demonstrated in the Specification, the choice of food consumed by the mountain climber will influence whether the change in bicarbonate ion concentration in the mountain climber's pulmonary capillaries increases (inhibiting HAPE) or decreases (promoting HAPE). Whether a food tends to increase or decrease bicarbonate concentration in the pulmonary capillaries of the mountain climber depends upon the content of the food.

As demonstrated by the Specification, a food that contains a relatively large amount of oxygen and a relatively small amount of hydrogen or nitrogen will do a better job of generating bicarbonate through metabolism than will a food that contains relatively less oxygen or relatively more hydrogen or nitrogen. The mountain climber therefore may inhibit HAPE by consuming foods rich in oxygen and carbon and poor in nitrogen and hydrogen. The examples given in the specification of foods inhibiting HAPE are glucose and sucrose. The mountain climber promotes HAPE by consuming foods rich in nitrogen and hydrogen and poor in oxygen and carbon. The examples given in the Specification of foods promoting HAPE are meat, legumes and fat.

The foregoing is fundamental science, the validity of which is demonstrated in the Specification. To analogize, few would disagree that an object dropped off a table will accelerate towards the floor under the force of gravity due to Newton's Second Law. Likewise, a food containing more oxygen and carbon and less hydrogen and nitrogen will inhibit HAPE when compared to a food that contains less oxygen and carbon and more hydrogen and nitrogen due to the Hammel/Hulett theory of osmosis. The Hammel/Hulett theory of osmosis is just as fundamental as Newtons' Second Law and just as predictable.

**B. Claim Rejections - 35 U.S.C. §112 Indefiniteness**

Claims 1 (amended) through 9 (amended) are amended to resolve the indefiniteness noted by the Examiner.

The Examiner indicates that the terms "minimize" and "maximize" are relative and render the claims indefinite. The Examiner invites the Applicant to substitute numerical values. Claim 1 (currently amended) is amended to avoid use of the terms "minimize" and "maximize." For claims 2 - 5 (currently amended), the Applicant respectfully traverses the rejection. As indicated in the American Heritage Dictionary, Houghton Mifflin Co. Boston (1969), the term "minimize" means:

1. To reduce to the smallest possible amount, extent, size, or degree. ... Usage: Minimize is an absolute term; as such, it cannot properly be qualified by adverbs such as greatly or somewhat...

From the same source, the term "maximize" means:

1. To make as great as possible; increase to a maximum..

The Applicant respectfully disagrees that the terms "minimize" or "maximize" are either relative or indefinite.

The claims are amended to address the remainder of the Examiner's rejections based on 35 U.S.C §112 indefiniteness. New Claims 10 and 11 claim the present Invention in terms of selecting among two or more foodstuffs, and hence avoid the


Examiner's concern relating to the use of the terms "minimize" and "maximize."

#### CONCLUSION

In light of the foregoing, the applicant requests that Claims 1 (currently amended) through 9 (currently amended) and Claims 10 (new claim) and 11 (new claim) be allowed. Should the Examiner have any questions regarding the Application in its present form, he is invited to telephone the undersigned to discuss such questions. This may help expedite prosecution of this application.

Respectfully submitted,

Date: 12/19/03



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## CLAIMS AMENDMENTS

1. (Currently Amended). A method for minimizing the incidence and effect of High Altitude Pulmonary Edema ("HAPE") in a person exposed to a hypoxic environment at high altitude, the method comprising the steps of:

- a. Ingesting by the person of foods selected so as to promote a ~~maximize~~ the change in bicarbonate concentrations in the a pulmonary arterial blood plasma from an arterial end to a venous end of a pulmonary capillary of the person;
- b. Refraining by the person from ingesting said foods that inhibit ~~reduce~~ said change in bicarbonate concentration in said pulmonary arterial blood plasma from said arterial end to said venous end of said pulmonary capillary of the person.

2. (Currently Amended). The method of Claim 1 ~~[[,]]~~ wherein said foods that promote ~~maximize~~ said change in bicarbonate concentration from said arterial end to said venous end of said pulmonary capillary of the person comprise ~~[[ing]]~~ a digestible carbohydrate selected so as to maximize a sum of a carbon content and ~~selected so as to maximize~~ an oxygen content of said digestible carbohydrate per calorie per gram dry weight of said digestible carbohydrate.

3. (Currently Amended) The method of Claim 2[[,]] wherein said digestible carbohydrate further is selected so as to minimize a hydrogen content of said ~~feed~~ digestible carbohydrate.

4. (Currently Amended) The method of Claim 3[[,]] wherein said digestible carbohydrate is further selected so as to maximize a ratio of moles of said oxygen in said digestible carbohydrate to moles of ~~said~~ a carbon in said digestible carbohydrate.

5. (Currently Amended) The method of Claim 4[[,]] wherein said digestible carbohydrate is selected so as to minimize a content of fats in said digestible carbohydrate as not maximizing the ratio of moles of said oxygen to moles of said carbon.

6. (Currently Amended) The method of Claim 5[[,]] wherein said digestible carbohydrate comprises[[ing]] glucose  $(C_6H_{12}O_6)$ .

7. (Currently Amended) The method of Claim 5[[,]] wherein said digestible carbohydrate comprises[[ing]] sucrose  $(C_{12}H_{24}O_{12})$ .

8. (Currently Amended) The method of Claim 1[[,]] wherein said foods that reduce said change in bicarbonate concentrations in said pulmonary arterial blood plasma from said arterial end to said venous end of said pulmonary capillary of the person ~~further~~ comprise [[ing]] said foods that contain nitrogen.

9. (Currently Amended) The method of Claim 8 wherein said foods containing nitrogen are selected from the list consisting of ~~comprising~~ meat and legumes.

10. (New Claim) A method for minimizing the incidence and effects of High Altitude Pulmonary Edema ("HAPE") on a person exposed to high altitude, the method comprising the steps of:

- (a) providing a plurality of foodstuffs, each of said foodstuffs being a digestible carbohydrate;
- (b) determining an oxygen content, a carbon content, and a caloric content for each of said foodstuffs;
- (c) determining a sum of said oxygen content and said carbon content for each of said foodstuffs;
- (d) determining a ratio of said sum of said oxygen content and said carbon content to said caloric content for each of said foodstuffs;
- (e) selecting a one of said plurality of said foodstuffs having a highest said ratio of said sum of said oxygen content and said carbon content to said caloric content;
- (f) ingesting by the person of said selected foodstuff.

11. (New Claim) The method of Claim 10, further comprising:

- (a) refraining by the person from ingesting other of said plurality of said foodstuffs;
- (b) refraining by the person from ingesting a fat;
- (c) refraining by the person from ingesting a meat;
- (d) refraining by the person from ingesting a legume.



12. (New Claim) A method for minimizing the incidence and effects of High Altitude Pulmonary Edema ("HAPE") on a person exposed to high altitude, the method comprising the steps of:

(a) ingesting by the person of sucrose or glucose;

(b) refraining by the person from ingesting a digestible carbohydrate other than said sucrose or said glucose;

(c) refraining by the person from ingesting a foodstuff containing a fat, a meat or a legume.